AMENDMENTS

Listing of Claims:

1. (original) A composition for assessing the presence of at least a first target molecule in a sample comprising a plurality of low-to-moderate affinity binding elements distributed on a surface of, and operatively coupled to a support, wherein concomitant binding of the first target molecule to two or more of the binding elements results in a high affinity interaction with the first target molecule.

2. (original) The composition of claim 1, wherein the binding elements are peptides, peptoids (N-substituted oligoglycines) or other peptide-like oligomers.

3. (original) The composition of claim 1, wherein the plurality of binding elements comprises at least a first and a second binding element having distinct binding specificity for a target molecule as compared to each other.

4. (original) The composition of claim 1, wherein a first binding element is operatively coupled to the second binding element.

5. (original) The composition of claim 4, wherein a spacer is operatively coupled to the first binding element, the second binding element or both the first and second binding element.

6. (original) The composition of claim 5, wherein the second binding element is an oligomer.

7. (original) The composition of claim 6, wherein the oligomer is a peptide or peptide derivative.

8. (original) The composition of claim 7, wherein the peptide derivative is comprised of one or more non-natural amino acid.

9. (original) The composition of claim 7, wherein the peptide derivative comprises one or more peptoid monomers.

10. (original) The composition of claim 3, wherein the first binding element is a nucleic acid, peptide, steroid, inorganic molecule or organic molecule.

11. (original) The composition of claim 6, wherein the first binding element is operatively coupled to a terminal monomer of the oligomer.

12. (original) The composition of claim 6, wherein the first binding element is operatively coupled to an internal monomer of the oligomer.

13. (original) The composition of claim 6, wherein a plurality of first binding elements are operatively coupled to the oligomer.

14. (original) The composition of claim 1, wherein the support is a cross-linked polymer bead or a chemically-modified glass slide.

15. (original) The composition of claim 1, wherein the sample is an environmental sample, a cell lysate, a blood sample, a sputum sample or a urine sample.

16. (original) The composition of claim 1, wherein the first target molecule further comprises a detectable label.

17. (original) The composition of claim 1, wherein the first target molecule is a biological molecule or metabolite.

18. (original) The composition of claim 1, wherein the first target molecule is a polypeptide.

19. (original) The composition of claim 1, wherein the polypeptide is modified.

20. (original) The composition of claim 19, wherein the modification is phosphorylation, SUMOylation or ubiquitylation.

21. (original) The composition of claim 1, wherein the binding elements are distributed randomly on the surface of the support.

22. (original) The composition of claim 1, further comprising at least a third and a fourth low-to-moderate binding element that bind a second target molecule, the third and fourth binding element distributed on a surface of, and operatively coupled to, the support, wherein concomitant binding of the second target molecule to the third and fourth binding elements results in a high affinity interaction with the second target molecule.

23. (original) The composition of claim 22, wherein the third and fourth low affinity binding elements have distinct binding specificity as compared to each other.

24. (original) The composition of claim 22, wherein the third and fourth binding elements have distinct binding specificity as compared to the first and second low affinity binding elements.

25. (original) The composition of claim 22, wherein the first and second low affinity binding elements are segregated from the third and fourth low affinity binding elements.

26. (original) The composition of claim 22, wherein the first and second low affinity binding elements are segregated from the third and fourth low affinity binding elements on the surface of the support.

27. (original) The composition of claim 26, wherein the first and second binding elements, and the third and fourth binding elements, are distributed randomly on the surface of the support within their respective segregated areas.

28. (withdrawn) A method of determining the presence of a target molecule in a sample comprising:

a) exposing the sample to a plurality of low-to-moderate affinity binding elements distributed on a surface of, and operatively coupled to a support, wherein concomitant binding of the target molecule to at least a two of the binding elements results in a specific high affinity interaction with the target molecule; and

b) evaluating binding of the target molecule to the binding elements.

29. (withdrawn) The method of claim 28, wherein binding is observed by spectroscopy.

30. (withdrawn) The method of claim 29, wherein spectroscopy is fluorescent spectroscopy.

31. (withdrawn) The method of claim 29, wherein spectroscopy is magnetic resonance imaging.

32. (withdrawn) The method of claim 28, wherein the target molecule is a biological molecule or metabolite.

33. (withdrawn) The method of claim 28, wherein the target molecule is a protein.

34. (withdrawn) The method of claim 33, wherein the protein is a modified protein.

35. (withdrawn) The method of claim 34, further comprising

c) comparing the binding in step b) with the binding of an unmodified protein.

36. (withdrawn) A method of producing a chimeric binding element comprising:

a) providing a first low-to-moderate affinity binding element;

b) providing a combinatorial library of oligomers;

c) operatively coupling the first binding element to one or more members of the combinatorial library; and

d) identifying a first binding element/oligomer combination with a high affinity for a target molecule, wherein at least a portion of the oligomer is a second binding element.

37. (withdrawn) The method of claim 36, wherein the oligomer is a peptide or peptide derivative.

38. (withdrawn) The method of claim 37, wherein the peptide derivative is comprised of one or more non-natural amino acid.

39. (withdrawn) The method of claim 36, wherein the peptide derivative comprises one or more peptoid monomers.

40. (withdrawn) The method of claim 36, wherein the first binding element is a nucleic acid, peptide, steroid, inorganic molecule or organic molecule.

41. (withdrawn) The method of claim 36, wherein the first binding element is operatively coupled to a terminal monomer.

42. (withdrawn) The method of claim 36, wherein the first binding element is operatively coupled to an internal monomer.

43. (withdrawn) A composition for assessing the presence of at least a first target molecule in a sample comprising chimeric binding elements distributed on a surface of, and operatively coupled to a support, wherein concomitant binding of the first target molecule to two or more of the chimeric binding elements results in a high affinity interaction with the first target molecule.